



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,784	10/21/2003	Brian S. Dixon	200208827-1	5630

22879 7590 04/19/2006

HEWLETT PACKARD COMPANY
P O BOX 272400, 3404 E. HARMONY ROAD
INTELLECTUAL PROPERTY ADMINISTRATION
FORT COLLINS, CO 80527-2400

EXAMINER

LEWIS, DAVID LEE

ART UNIT	PAPER NUMBER
----------	--------------

2629

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,784

Applicant(s)

DIXON, BRIAN S.

Examiner

David L. Lewis

Art Unit

2629

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/21/2003</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. **Claims 1-3, 6-17, 19-22, and 25-30 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada (6765585).**

As in claim 1, Wada teaches of a method of adjusting color of images displayed in ambient light, figure 1 and 5,

comprising: sensing a signal from a plurality of spectral regions of an ambient light source to define a sensed signature of the ambient light source, column 6 lines 20-35, figure 6 item S6;

comparing the sensed signature to predetermined signatures of candidate light sources to identify a candidate light source that corresponds to the ambient light source, column 6 lines 40-50, column 10 lines 35-40;

and creating images modified by a predefined color adjustment for the candidate light source identified, column 6 lines 29-40.

Art Unit: 2629

Wherein the color sensor 60 detects ambient light from the display environment, and compares the displayable color gamut based on the environment information to the target color gamut based on plurality of projector types.

As in claim 2, Wada teaches of which further comprises providing a predetermined signature and a predefined color adjustment for each of the candidate light sources, column 9 lines 5-26, wherein a target profile is equivalent to said signature, and the mapping color gamut is equivalent to the predefined color adjustment.

As in claim 3, Wada teaches of wherein providing a predetermined signature includes providing data relating to intensity of a candidate light source in each of the spectral regions for each of the plurality of candidate light sources, column 9 lines 5-26, wherein the color gamut includes the spectral regions as is known.

As in claim 6, Wada teaches of wherein providing a predefined color adjustment includes defining an optical modification of one or more light components used to create the images, column 10 lines 5-10, figure 5 item 190, wherein the light values are driven based on the input RGB signals, said drive signals defining the optical modification..

As in claim 7, Wada teaches of wherein defining an optical modification includes defining a filter through which one or more of the light components will be passed during creating images, column 10 lines 5-10, figure 5 item 190.

As in claim 8, Wada teaches of wherein sensing a signal from each of a plurality of spectral regions includes 1) selecting two or more spectral regions that in combination produce distinguishable signatures for each of the candidate light sources, column 6 lines 20-30, and 2) sensing an intensity from each of the two or more spectral regions, column 6 lines 20-30, wherein the RGB or XYZ tristimulus values represent intensities from the different colors, RGB, which represent different spectral regions.

As in claim 9, Wada teaches of wherein sensing a signal for each of a plurality of spectral regions includes sensing the signal for each of three or more spectral regions, column 6 lines 20-30, RGB tristimulus.

As in claim 10, Wada teaches of wherein comparing includes selecting a predetermined signature that most closely corresponds to the signal sensed for each of the spectral regions, column 10 lines 35-65, wherein the outcome is based on whether the sensed information matches the target information.

As in claim 11, Wada teaches of wherein creating images includes projecting light onto a surface, column 10 lines 5-10, figure 1 items 10 and 12.

As in claim 12, Wada teaches of wherein creating images includes 1) selecting image representations having data corresponding to the images, column 9 lines 45-60, 2) modifying the data according to the color adjustment, column 10 lines 1-10, and 3) sending the data to a light engine after modifying, column 10 lines 5-10.

As in claim 13, Wada teaches of wherein selecting image representation includes selecting digital image files, column 9 lines 45-60, figure 5 item 162, wherein a color gamut digital image file is selected.

As in claim 14, Wada teaches of a system for adjusting color of images displayed in ambient light, **figures 1 and 5,**

comprising: a light engine configured to create images from a set of image representations, **figure 1 item 20, figure 5 item 190;**

a light sensor for sensing a signal from each of a plurality of spectral regions of an ambient light source to define a sensed signature of the ambient light source, **figure 1 item 60, figure 5 item 60**;

and a controller in communication with the light sensor and the light engine, the controller having access to a predetermined signature and a predefined color adjustment for each of a plurality of candidate light sources, **figure 1 item 20**, column 8 lines 20-30, figure 5 items 60, 100, 190, 200,

the controller being configured to compare the sensed signature to the predetermined signatures to identify a candidate light source that corresponds to the ambient light source, thereby defining a selected color adjustment based on the candidate light source identified, **column 6 lines 40-50, column 10 lines 25-38**,

the controller also being configured to modify each of the images created by the light engine with the color adjustment for the candidate light source identified, **figure 5 item 160**, column 10 lines 35-65.

As in claim 15, Wada teaches of wherein the light sensor includes a plurality of filters that selectively permit light from each of the spectral regions to reach the light sensor, figure 5 item 190, said light values being equivalent to filters.

As in claim 16, Wada teaches of wherein the light sensor includes a plurality of sensor elements, each sensor element of the plurality being configured to sense a different one of the spectral regions, figure 5 item 60, column 6 lines 20-30.

As in claim 17, Wada teaches of wherein the controller is configured to send instructions corresponding to the image representations to the light engine, column 9 lines 39-60, and wherein the controller is configured to apply the selected color adjustment before sending, figure 120 and 160, column 10 lines 1-23.

As in claim 19, Wada teaches of wherein the controller is configured to send instructions for optical modification of light components by the light engine, the optical modification including selecting a filter through which to pass one or more of the light components, figure 5 item 190, said light values being equivalent to filters.

As in claim 20, Wada teaches of wherein the light engine is configured to project light onto a surface, column 10 lines 5-10, figure 1 items 10 and 12.

As in claim 21, Wada teaches of a program storage device readable by a processor, tangibly embodying a program of instructions executable by the processor to perform methods steps for adjusting color of images displayed in ambient light, **column 12 lines 1-20**

the method steps comprising: providing a predetermined spectral signature and a predefined color adjustment for each of a plurality of candidate light sources, **column 9 lines 45-67, column 10 lines 19-22;**

sensing a signal from a plurality of spectral regions of an ambient light source to define a sensed signature of the ambient light source, **column 6 lines 29-35;**

comparing the sensed signature to each predetermined signature to identify a candidate light source that corresponds to the ambient light source, thereby selecting a color adjustment based on the candidate light source identified, **column 6 lines 40-50, column 10 lines 35-40;**

and creating images modified by the selected color adjustment, **column 6 lines 29-40.**

As in claim 22, Wada teaches of wherein providing a predetermined signature includes providing data relating to intensity of a candidate light source in each of the

spectral regions for each of the plurality of candidate light sources, column 9 lines 5-26, wherein the color gamut includes the spectral regions as is known.

As in claim 25, Wada teaches of wherein providing a predefined color adjustment includes defining an optical modification of one or more light components used to create the images, **column 10 lines 5-10, figure 5 item 190**, wherein the light values are driven based on the input RGB signals, said drive signals defining the optical modification.

As in claim 26, Wada teaches of wherein defining an optical modification includes defining a filter through which one or more of the light components will be passed during creating images, **column 10 lines 1-10, figure 5 item 190**, wherein the light values are driven based on the input RGB signals, said light values being equivalent to filters.

As in claim 27, Wada teaches of wherein sensing a signal from each of a plurality of spectral regions includes 1) selecting two or more spectral regions that in combination produce distinguishable signatures for each of the candidate light sources, column 6 lines 20-30, and 2) sensing an intensity from each of the two or more spectral regions, column 6 lines 20-30, wherein the RGB or XYZ tristimulus values represent intensities from the different colors, RGB, which represent different spectral regions.

As in claim 28, Wada teaches of wherein sensing a signal for each of a plurality of spectral regions includes sensing the signal for each of three or more spectral regions, column 6 lines 20-30, RGB tristimulus.

As in claim 29, Wada teaches of wherein comparing includes selecting a predetermined signature that most closely corresponds to the signal sensed for each of the spectral regions, column 10 lines 35-65, wherein the outcome is based on whether the sensed information matches the target information.

As in claim 30, Wada teaches of a system for adjusting color of images displayed in ambient light, figure 5 and 6,

comprising: means for sensing a signal from a plurality of spectral regions of an ambient light source to define a sensed signature of the ambient light source, **column 6 lines 17-35;**

means for comparing the sensed signature to predetermined signatures of candidate light sources to identify a candidate light source that corresponds to the ambient light source, **column 6 lines 40-50, column 10 lines 35-44, figure 5 item 160;**

and means for creating images modified by a predefined color adjustment for the candidate light source identified, **column 6 lines 29-40, figure 5 item 120.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 4, 5, 18, 23, and 24 rejected under 35 U.S.C. 103(a) as being unpatentable over Wada (6765585) in view of Matsuda et al. (2003/0234785).

As in claims 4, 5, 18, 23, and 24, fails to teach of said defining one or more lookup tables for transformation of input color values to output color values, and wherein creating images includes modifying input values from digital image files using the one or

more lookup tables of the selected color adjustment. **Wada teaches of an improvement** to the look up table because of the memory and therefore cost savings involved to produce the device. However it would have been obvious to the skilled artisan at the time of the invention to provide for said look up table as a replacement to Wada's matrix converter and generator if the manufacturing costs associated with the use of look up tables were not an issue and were preferred as a design choice. **Matsuda et al., discloses** an invention owned by the same assignee, having the same inventive concept as evidenced by figure 2 of Matsuda compared to figure 5 of Wada. As shown in figure 2 item 120 of Matsuda, a look up table can be used for the purpose of correcting the image, or a matrix converter can be used to accomplish the same end. The look up table relates a plurality of input color values to a single output color value for at least a subset of the image elements. **Therefore it would have been obvious** to the skilled artisan at the time of the invention to modify the image processing color converter from the matrix converter as taught by Wada to the LUT as taught by Matsuda et al., because the look up table is a useful and known design alternative, as suggested by Matsuda, for the device of Wada, as found in claims 4, 5, 18, 23, and 24.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 2004/0196250, 2003/0020725, 2004/0008288, 2003/0231260, 2004/0212546.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(571) 272-7673**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts

Art Unit: 2629

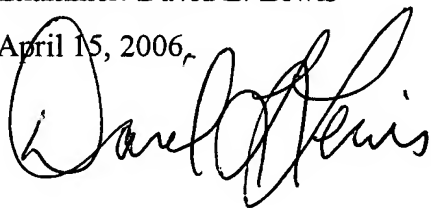
to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on **(571) 272-7681**. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571)-273-8300.

5. Please note that all future correspondences directed to David L. Lewis must be sent to Art Unit 2629.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: David L. Lewis

April 15, 2006,

A handwritten signature in black ink, appearing to read "David L. Lewis", is written over the date "April 15, 2006,".